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The Mediating Role of Self-Compassion in Explaining the Relationship Between Personality Traits and Altruistic Behaviors Among Nurses

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ABSTRACT

The present study aimed to investigate the mediating role of self-compassion in explaining the relationship between personality traits and altruistic behaviors among nurses. The research employed a descriptive-correlational design. For this purpose, 316 nurses working in Tehran were selected through voluntary nonprobability sampling and completed the NEO Personality Inventory (McCrae & Costa, 1997), the Self-Compassion Scale (Neff, 2003), and the Altruistic Behavior Questionnaire (Ahmadi, 2009). Data were analyzed using structural equation modeling. SPSS and AMOS software were also used for data classification, processing, statistical analysis, and hypothesis testing. Evaluation of the hypothesized model using goodness-of-fit indices indicated that the proposed model demonstrated an acceptable fit to the data (CFI = .969, GFI = .961, RMSEA = .051). The findings showed that personality traits and self-compassion had significant direct effects on altruistic behaviors ($p < .05$). The results further indicated that personality traits exerted significant indirect effects on altruistic behaviors through self-compassion ($p < .05$). These findings highlight the importance of addressing personality characteristics and enhancing self-compassion in educational and psychological empowerment programs for nurses, as these factors may promote helping behaviors, empathy, and supportive interactions in clinical settings and thereby improve the quality of patient care.

Keywords: self-compassion, personality traits, altruism, nurses.

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Introduction

Nursing is a profession in which interpersonal sensitivity, ethical responsibility, emotional regulation, and willingness to act for the benefit of others are central to effective clinical practice. Nurses routinely encounter situations that require them to provide assistance, emotional support, reassurance, and practical care beyond narrowly defined technical duties, often while working under time pressure, high workload, emotional strain, and organizational constraints. In this context, altruistic behavior is particularly important because it reflects voluntary actions intended to benefit others without an immediate expectation of personal reward. Within health care, such behavior may be manifested through helping colleagues, spending additional time with distressed patients, offering emotional support, responding to urgent needs, sharing knowledge, and contributing to a cooperative clinical environment. Contemporary perspectives on prosocial behavior emphasize that helping actions are multidetermined and arise from the interaction of dispositional, affective, moral, interpersonal, and situational processes (1). In nursing specifically, prosocial actions have

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been associated with improved teamwork, organizational functioning, and quality of care, indicating that altruistic behavior is not merely an individual moral virtue but also a clinically and organizationally relevant phenomenon (2). Recent reviews further suggest that prosocial behavior in the workplace contributes to interpersonal trust, cooperation, employee well-being, and organizational effectiveness, highlighting the value of identifying psychological factors that promote such behaviors among health professionals (3).

Altruism has particular significance in nursing because the profession is intrinsically oriented toward the welfare of individuals who may be physically vulnerable, emotionally distressed, dependent on others, or unable to advocate fully for themselves. A recent scoping review of altruism in nursing showed that altruistic tendencies have been studied in relation to caring values, motivation, professional identity, empathy, and service orientation, underscoring their relevance to both nursing education and clinical practice (4). Prosocial conduct among nurses can also contribute to the humanization of care by strengthening responsiveness to patients' emotional and moral needs. Evidence indicates that moral sensitivity and empathy are closely connected with prosocial behavior in nurses, suggesting that the capacity to understand others' distress and respond constructively to it constitutes an important foundation for humane care (5). Likewise, prosocial service behavior among nurses has been associated with communication satisfaction and emotional labor, suggesting that helping-oriented conduct is embedded in broader patterns of interpersonal functioning within health-care organizations (6). Among nursing students, prosocial behaviors have also been linked with subjective well-being through psychological resilience and adaptive coping, demonstrating that helping others may be associated with beneficial outcomes not only for recipients but also for the helpers themselves (7). These findings support the view that altruism is an important behavioral outcome in nursing and that understanding its dispositional and psychological antecedents may have practical implications for workforce development and patient care.

One of the most influential dispositional frameworks for explaining individual differences in behavior is the Five-Factor Model of personality, which includes neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Personality traits represent relatively stable patterns of thought, emotion, and behavior that shape how individuals perceive social situations, regulate affect, and respond to interpersonal demands. A substantial body of research suggests that personality characteristics are related to prosociality, although the strength and direction of these associations may differ across traits and populations. Studies of adolescents have shown that Big Five personality traits are associated with prosocial behavior, supporting the proposition that dispositional characteristics contribute to individual differences in helping tendencies (8). Similar findings have been reported in studies identifying the Big Five as determinants of prosocial behavior, with particular emphasis on socially oriented and self-regulatory traits (9). Experimental evidence has also suggested that conscientiousness can moderate responses to situational cues that elicit helping behavior, indicating that personality may shape how people translate situational demands into prosocial action (10). More recent findings among nursing undergraduates similarly indicate that proactive personality is positively associated with prosocial behavior and that a sense of responsibility may serve as an explanatory psychological mechanism in this relationship (11).

Among the Five-Factor traits, agreeableness and conscientiousness appear especially relevant to altruistic behavior. Agreeableness encompasses interpersonal warmth, cooperation, trust, consideration, and concern for others, characteristics that are conceptually compatible with helping and caregiving. Conscientiousness

reflects responsibility, self-discipline, dependability, and adherence to duties, which may promote helping through a heightened sense of obligation and reliability. Research among health workers has shown meaningful relationships among conscientiousness, civic virtue, altruism, and employee motivation, supporting the importance of conscientiousness in prosocial occupational functioning (12). The moral implications of conscientiousness have also been discussed in relation to responsible and ethically regulated behavior, suggesting that this trait may support consistency between internal standards and socially constructive action (13). By contrast, neuroticism, characterized by emotional instability, worry, vulnerability to stress, and negative affectivity, may interfere with altruistic action when individuals become excessively preoccupied with their own distress. Research on affective personality has linked core personality dimensions with emotional-processing systems, providing a neuropsychological basis for the possibility that dispositional affectivity influences interpersonal reactions and social behavior (14). In health-care populations, personality is also relevant to psychological strain: among female nurses, personality traits have been associated with burnout, suggesting that dispositional differences may influence how nurses respond to the emotional burden of their work (15). Moreover, job satisfaction among hospital nurses is influenced by multiple psychological and organizational factors, reinforcing the importance of considering personality and emotional functioning within the broader context of nursing performance and well-being (16).

Personality traits may also influence altruistic behavior through empathy and related interpersonal processes. For example, personality characteristics have been associated with cognitive empathy among medical students, suggesting that certain dispositional patterns may facilitate the understanding of others' emotional states (17). This is particularly important in nursing because the capacity to recognize suffering does not automatically result in compassionate or helping behavior; rather, emotional and cognitive responses must be regulated in a manner that permits constructive engagement. Agreeableness may increase receptivity to others' needs, conscientiousness may facilitate responsible action, and neuroticism may either heighten sensitivity to distress or, when excessive, redirect attention toward one's own emotional discomfort. These mechanisms suggest that the relationship between personality and altruistic behavior may not be purely direct. Instead, an intrapersonal regulatory resource may partly explain why some personality configurations are more likely than others to be expressed as helping behavior. One such candidate is self-compassion.

Self-compassion refers to a supportive, balanced, and nonjudgmental way of relating to oneself during experiences of suffering, failure, inadequacy, or stress. It is generally conceptualized as comprising self-kindness rather than self-judgment, recognition of common humanity rather than isolation, and mindful awareness rather than over-identification with painful thoughts and emotions. The construct has been extensively developed within contemporary psychological theory and has been supported as both theoretically coherent and psychometrically valid (18). Self-compassion is not equivalent to self-pity, self-indulgence, or withdrawal from responsibility; instead, it involves treating oneself with care while maintaining awareness of personal difficulties within the broader context of shared human experience. Compassion-focused theory similarly emphasizes that compassionate responding is rooted in evolved systems of affiliation, soothing, and care that can regulate threat-based emotional processes (19). Accordingly, self-compassion may be particularly relevant for nurses, who are repeatedly exposed to

suffering, high responsibility, emotionally demanding encounters, and the possibility of mistakes or perceived inadequacy.

The psychological benefits of self-compassion are well documented. A meta-analysis demonstrated a robust positive association between self-compassion and psychological well-being, supporting its role as an important protective psychological resource (20). Self-compassion has also been associated with more adaptive responses to stress and illness, including healthier coping processes and reduced stress in the context of chronic health conditions (21). In clinical populations, lower self-compassion has been linked with depressive symptoms, rumination, and avoidance, suggesting that self-compassion may protect individuals against maladaptive self-focused processing under emotional strain (22). Interventions designed to cultivate mindful self-compassion have further demonstrated improvements in self-compassion and psychological functioning, supporting the modifiability of this construct (23). In health-care professionals, mindfulness and self-compassion have also been linked to empathy and professional well-being, suggesting that self-compassion may contribute to healthier interpersonal engagement in caregiving environments (24). These findings are particularly relevant in nursing, where effective helping requires sustained emotional availability without becoming overwhelmed by patients' suffering.

Importantly, self-compassion may also be systematically related to personality. Neuroticism has received particular attention because it is characterized by heightened sensitivity to threat and negative affect, whereas self-compassion involves emotional balance, self-kindness, and reduced self-criticism. Research has shown considerable overlap between self-compassion and neuroticism while also indicating that self-compassion retains distinctive psychological meaning beyond neuroticism itself (25). Similarly, studies of compassion and depressive symptomatology have suggested that individual differences in neuroticism and compassion jointly contribute to vulnerability to maladaptive rank-based and depressive processes (26). Evidence from university populations has also demonstrated that self-compassion can mediate the effects of personality traits on positive psychological functioning, directly supporting the proposition that self-compassion may operate as a psychological mechanism linking stable personality dispositions with adaptive outcomes (27). Furthermore, research on personality and mental health has shown that personality traits remain relevant to psychological adjustment across diverse populations, reinforcing their importance as distal predictors of emotional and interpersonal functioning (28). Together, these findings suggest that self-compassion may serve as a proximal regulatory process through which personality influences behavior.

The potential connection between self-compassion and altruism is especially important. At first glance, self-compassion might appear to be primarily self-focused; however, an expanding body of evidence suggests that a compassionate orientation toward oneself can extend outward and support concern for others. Developmental research has demonstrated that self-compassion is associated with empathy and prosocial behavior, challenging the assumption that caring for oneself necessarily reduces orientation toward others (29). Longitudinal evidence similarly suggests that self-compassion can predict increases in gratitude and prosocial behavior over time, indicating that it may contribute to more enduring patterns of socially constructive behavior (30). More recent multilevel meta-analytic evidence has directly examined whether compassion toward oneself extends to prosocial behavior toward others and has supported a positive relationship between self-compassion and prosociality (31). Likewise, self-compassion and social

responsibility have both been shown to contribute to prosocial behavior, suggesting that intrapersonal care and interpersonal responsibility may operate as complementary rather than competing orientations (32).

Several psychological mechanisms may account for this association. Individuals with greater self-compassion may be less consumed by self-criticism, shame, rumination, and emotional defensiveness when confronted with difficult interpersonal situations. As a result, they may have greater emotional resources available to recognize and respond to the needs of others. Self-compassion may also reduce the tendency to interpret suffering as isolating or uniquely personal, thereby strengthening the sense of common humanity that is inherently compatible with prosocial concern. In caregiving occupations, this process may be especially consequential because repeated exposure to pain and distress can produce emotional depletion unless the caregiver has adequate self-regulatory resources. Evidence among care professionals has shown that resilience is associated with prosocial behavior, indicating that psychological resources can support continued helping in demanding occupational contexts (33). From this perspective, self-compassion may function as an emotional regulatory resource that preserves the capacity for altruistic responding even when nurses experience occupational stress.

At the same time, the personality–self-compassion–altruism relationship is likely to be trait-specific rather than uniform. Agreeableness may promote self-compassion through a broader orientation toward warmth and acceptance, which can potentially be directed inward as well as outward. Conscientiousness may foster self-regulation, responsibility, and constructive coping, increasing the likelihood that individuals respond to personal setbacks without disengaging from professional obligations. Neuroticism, in contrast, may undermine self-compassion by intensifying self-criticism, emotional reactivity, and over-identification with distress. Extraversion and openness may also contribute, although their relationships with altruism may be more context dependent. This differentiated view is consistent with research showing that personality traits vary in their relations with prosocial behavior and that no single trait can account for the full complexity of helping behavior (8, 9). It is therefore theoretically useful to examine not only whether personality traits predict altruistic behavior but also whether self-compassion explains part of these associations.

Despite increasing attention to prosocial behavior, personality, and self-compassion, several gaps remain. Much of the research on self-compassion has focused on mental health, well-being, stress, and emotional adjustment, whereas its role as a mediator between personality and altruistic behavior has received comparatively less attention. Similarly, studies of prosociality in nursing have frequently emphasized empathy, moral sensitivity, organizational communication, resilience, or professional values rather than testing an integrated model involving stable personality traits and self-compassion as an explanatory mechanism (5-7). Emerging evidence concerning proactive personality, responsibility, and prosocial behavior in nursing students further highlights the importance of examining psychological pathways through which personality characteristics are translated into prosocial action (11). Moreover, the distinction between different forms of altruistic behavior, such as ordinary and emergency altruism, is clinically meaningful because nursing practice includes both routine helping and rapid responses to urgent interpersonal needs. An integrated model incorporating personality traits, self-compassion, and altruism may therefore provide a more comprehensive explanation of why some nurses consistently engage in helping behaviors across different clinical situations.

Understanding these mechanisms has practical significance because personality traits are relatively stable, whereas self-compassion is potentially modifiable through psychological and educational interventions. If self-compassion mediates the relationship between specific personality traits and altruistic behavior, then interventions aimed at strengthening self-kindness, common humanity, and mindful emotional awareness may enhance prosocial functioning even among nurses whose dispositional characteristics are less naturally conducive to helping behavior. Such an approach is consistent with evidence that compassion-based interventions can improve psychological functioning (23) and that self-compassion is meaningfully connected with empathy and professional well-being in health-care settings (24). It also aligns with the broader organizational literature indicating that prosocial behavior is a valuable target because of its positive implications for work environments and service quality (3). Therefore, identifying self-compassion as a mediating psychological mechanism may contribute both to theory and to the development of targeted programs designed to support nurses' psychological resources and interpersonal effectiveness.

Accordingly, the aim of the present study was to investigate the mediating role of self-compassion in explaining the relationship between personality traits and altruistic behaviors among nurses.

Methods and Materials

Study Design and Participants

The present study was fundamental in terms of its purpose and descriptive-correlational in terms of the method of data collection. The statistical population consisted of all nurses aged 30–45 years working in hospitals in Tehran. Kline (2015) suggested that, in structural equation modeling, approximately 10 to 20 participants are required for each variable; however, in confirmatory factor analysis, the minimum sample size is determined primarily by the number of factors rather than merely by the number of variables. The present study included 15 observed variables; therefore, assuming 20 participants per variable, a sample size of 300 participants was considered adequate. Accordingly, considering the scope of the study and the possibility of participant attrition, 330 nurses were initially recruited through voluntary nonprobability sampling so that an adequate final sample could be retained in accordance with methodological recommendations. Of these participants, data from 316 nurses were suitable for analysis, and all subsequent statistical analyses were conducted exclusively on their data. The inclusion criteria were being between 30 and 45 years of age, being employed as a nurse in a hospital in Tehran, having at least one year of work experience, being willing to participate in the study, and providing written informed consent. The exclusion criteria consisted of unwillingness to continue participation at any stage of the study and incomplete or missing responses to the questionnaires. The research instruments were as follows.

Data Collection Tools

NEO Personality Inventory: The 60-item NEO Personality Inventory was developed by McCrae and Costa (1997). The questionnaire assesses five major personality dimensions: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (McCrae & Costa, 1997). Each factor consists of 12 items selected on the basis of their relatively high factor loadings on the corresponding personality dimension. Responses are provided on a 5-point Likert scale ranging from *strongly disagree* to *strongly*

agree. McCrae and Costa (1997) reported internal consistency coefficients above .80 for the subscales and Cronbach's alpha coefficients of .86 for neuroticism, .73 for extraversion, .56 for openness, .68 for agreeableness, and .87 for conscientiousness. Regarding validity, construct validity was evaluated through confirmatory factor analysis, yielding acceptable fit indices, including CFI = .91, RMSEA = .05, and GFI = .89. In addition, Shams et al. (2022) reported satisfactory face validity for the questionnaire based on expert evaluations and obtained Cronbach's alpha coefficients of .77 for neuroticism, .68 for extraversion, .69 for openness, .74 for agreeableness, and .71 for conscientiousness.

Self-Compassion Scale: The Self-Compassion Scale was developed by Neff (2003) and consists of 26 items. The instrument comprises six bipolar dimensions representing the positive and negative aspects of the three fundamental components of self-compassion: self-kindness (5 items) versus self-judgment (5 items), common humanity (4 items) versus isolation (4 items), and mindfulness (4 items) versus over-identification (4 items). The self-judgment, isolation, and over-identification subscales represent negative dimensions and are inversely related conceptually to self-kindness, common humanity, and mindfulness, respectively. Items are scored on a 5-point Likert scale ranging from 1 to 5. Higher total scores indicate greater levels of self-compassion. The developers confirmed the content and construct validity of the scale, and Cronbach's alpha coefficients for its subscales ranged from .81 to .92. Khosravi et al. (2013) also confirmed the content and construct validity of the instrument and reported Cronbach's alpha coefficients ranging from .74 to .82 for the scales based on their collected data.

Altruistic Behavior Questionnaire: This questionnaire was developed by Ahmadi (2009) and consists of 13 items designed to assess different dimensions of altruistic behavior, namely ordinary altruism and emergency altruism. Items are scored using a 4-point Likert scale. The questionnaire contains two dimensions: the first dimension, ordinary altruism, is assessed using eight items, whereas the second dimension, emergency altruism, is assessed using five items. The score for each dimension is calculated by summing the scores of the corresponding items. Higher total scores indicate a higher level of altruistic behavior in the respondent, whereas lower scores indicate lower levels of altruistic behavior. In the study by Ahmadi (2009), the face validity of the questionnaire was evaluated and confirmed by university faculty members. Its construct validity was also supported through factor analysis. Furthermore, a Cronbach's alpha coefficient of .71 was reported, indicating acceptable reliability for the instrument.

Data Analysis

SPSS and AMOS software were used for data classification, processing, statistical analysis, and testing the research hypotheses.

Findings and Results

A total of 316 nurses, including 76 men and 240 women, participated in the present study. Of the participants, 61 (19.3%) were younger than 25 years, 78 (24.7%) were aged 26–30 years, 107 (33.9%) were aged 31–35 years, 49 (15.5%) were aged 36–40 years, and 21 (6.6%) were older than 40 years. Regarding marital status, 121 participants (38.3%) were single, 178 (56.3%) were married, and 17 (5.4%) were separated from their spouses. Regarding educational attainment, 174 participants (55.1%) held a bachelor's degree, 133 (42.1%) held a master's degree, and 9 (2.8%) held a doctoral degree. With respect to work experience, 46

participants (14.6%) had less than one year of experience, 70 (22.2%) had 1–5 years, 105 (33.2%) had 5–10 years, 54 (17.1%) had 10–15 years, 29 (9.2%) had 15–20 years, and 12 (3.8%) had more than 20 years of work experience.

Table 1 presents the means, standard deviations, and correlation coefficients among personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness), self-compassion dimensions (self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification), and altruistic behaviors (ordinary altruism and emergency altruism).

Table 1. Means, Standard Deviations, and Correlation Matrix of the Study Variables

Study Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Personality – Neuroticism	—												
2. Personality – Extraversion	−.43**	—											
3. Personality – Openness	−.02	.11*	—										
4. Personality – Agreeableness	−.27**	.35**	.20**	—									
5. Personality – Conscientiousness	−.34**	.41**	.16**	.47**	—								
6. Self-compassion – Self-kindness	−.20**	.27**	.08	.20**	.27**	—							
7. Self-compassion – Self-judgment	−.28**	.30**	.07	.31**	.35**	.61**	—						
8. Self-compassion – Common humanity	−.25**	.26**	.02	.33**	.26**	.35**	.39**	—					
9. Self-compassion – Isolation	−.24**	.23**	.02	.24**	.21**	.36**	.36**	.65**	—				
10. Self-compassion – Mindfulness	−.28**	.30**	.11*	.32**	.30**	.42**	.41**	.36**	.50**	—			
11. Self-compassion – Over-identification	−.28**	.21**	.09	.27**	.29**	.48**	.45**	.51**	.66**	.52**	—		
12. Altruism – Ordinary altruism	−.26**	.23**	.04	.30**	.26**	.18**	.23**	.29**	.27**	.29**	.32**	—	
13. Altruism – Emergency altruism	−.24**	.18**	.12*	.33**	.28**	.17**	.20**	.27**	.23**	.28**	.27**	.62**	—
Mean	26.79	24.79	26.55	27.04	25.32	15.01	11.37	11.63	12.57	10.63	11.73	26.13	17.34
SD	8.07	7.88	6.24	8.18	6.23	3.76	2.64	3.28	3.20	2.82	3.28	5.94	4.84

Based on the results presented in Table 1, the correlation coefficients among the study variables were in the expected directions and were consistent with the theoretical foundations of the research. To evaluate the assumption of univariate normality, the skewness and kurtosis values of each variable were examined. Furthermore, the variance inflation factor (VIF) and tolerance coefficients were examined to assess the assumption of absence of problematic multicollinearity. The results are presented in Table 2.

Table 2. Assessment of the Assumptions of Normality and Multicollinearity

Variable	Skewness	Kurtosis	Tolerance	VIF
Personality – Neuroticism	.03	−.61	.72	1.39
Personality – Extraversion	−.15	−.51	.65	1.53
Personality – Openness	.07	−.53	.90	1.11
Personality – Agreeableness	−.42	−.66	.57	1.75
Personality – Conscientiousness	−.08	−.18	.62	1.62
Self-compassion – Self-kindness	−.01	−.87	.53	1.88
Self-compassion – Self-judgment	−.10	.68	.53	1.90
Self-compassion – Common humanity	−.52	−.29	.47	2.13

Self-compassion – Isolation	−.13	−.88	.40	2.52
Self-compassion – Mindfulness	−.24	−.28	.56	1.79
Self-compassion – Over-identification	.12	−1.04	.43	2.31
Altruism – Ordinary altruism	−.03	−.67	—	—
Altruism – Emergency altruism	.10	−.85	—	—

Consistent with the findings presented in Table 2, the skewness and kurtosis values for all variables fell within the range of ±2. This finding indicates that the assumption of univariate normality was satisfied (see Kline, 2016). Table 2 also indicates that the assumption concerning the absence of problematic multicollinearity was met in the present dataset because the tolerance values of all predictor variables were greater than .10 and their VIF values were lower than 10. According to Meyers et al. (2006), tolerance values below .10 and VIF values greater than 10 indicate problematic multicollinearity. To assess multivariate normality, Mahalanobis distance values were analyzed. The skewness and kurtosis values for the Mahalanobis distance distribution were .98 and 1.21, respectively. Because both indices were within the ±2 range, the assumption of multivariate normality was considered to have been satisfied. In addition, to assess the assumption of homoscedasticity, the scatterplot of standardized residuals was examined, and the results indicated that this assumption was also satisfied.

In the present study, self-compassion and altruism were treated as latent variables and constituted the measurement model. The latent variable of self-compassion was hypothesized to be measured by the indicators of self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification, whereas the latent variable of altruism was hypothesized to be measured by the indicators of ordinary altruism and emergency altruism. The fit of the measurement model was assessed using confirmatory factor analysis in AMOS 24.0 with maximum likelihood (ML) estimation. Table 3 presents the goodness-of-fit indices for the measurement and structural models.

Table 3. Goodness-of-Fit Indices for the Measurement and Structural Models

Fit Index	Initial Measurement Model	Modified Measurement Model	Structural Model	Recommended Cutoff
χ^2	128.74	35.54	85.36	—
df	19	17	47	—
χ^2/df	6.78	2.09	1.82	< 3
GFI	.907	.975	.961	> .90
AGFI	.823	.947	.925	> .85
CFI	.870	.978	.969	> .90
RMSEA	.135	.059	.051	< .08

Table 3 shows that, with the exception of the GFI, the goodness-of-fit indices obtained from the initial confirmatory factor analysis did not support an acceptable fit of the measurement model to the collected data. Therefore, the modification indices were examined. Covariances were subsequently specified between the error terms of the self-judgment and common humanity indicators and between the error terms of the isolation and mindfulness indicators. Following these modifications, the measurement model was re-estimated. As shown in Table 3, the resulting goodness-of-fit indices indicated that the modified measurement model had an acceptable fit to the collected data. In the measurement model, the largest factor loading was obtained for self-kindness (β = .853), whereas the smallest factor loading was observed for emergency altruism (β = .485). Because the factor loadings of all indicators exceeded .32, all indicators were considered to possess adequate strength for measuring the latent constructs examined in the present study.

Following assessment of the measurement model, the goodness-of-fit indices for the structural model were estimated and evaluated in the second stage. The structural model hypothesized that personality traits would predict altruistic behaviors among nurses through the mediating role of self-compassion. The structural model was analyzed, and, as shown in Table 3, the resulting fit indices supported an acceptable fit between the proposed structural model and the collected data. Table 4 presents the direct, indirect, and total path coefficients in the structural model.

Table 4. Direct, Indirect, and Total Path Coefficients Among the Study Variables in the Structural Model

Effect	Path	B	SE	β	p
Direct	Conscientiousness → Self-compassion	.098	.043	.171	.026
Direct	Agreeableness → Self-compassion	.089	.029	.203	.001
Direct	Openness → Self-compassion	.012	.032	.022	.712
Direct	Extraversion → Self-compassion	.037	.030	.083	.243
Direct	Neuroticism → Self-compassion	−.102	.031	−.233	.001
Direct	Conscientiousness → Altruism	.074	.029	.185	.019
Direct	Agreeableness → Altruism	.106	.030	.346	.001
Direct	Openness → Altruism	.008	.031	.019	.781
Direct	Extraversion → Altruism	−.010	.030	−.033	.723
Direct	Neuroticism → Altruism	−.061	.028	−.199	.021
Direct	Self-compassion → Altruism	.310	.078	.443	.001
Indirect	Conscientiousness → Altruism	.030	.016	.076	.026
Indirect	Agreeableness → Altruism	.027	.012	.090	.001
Indirect	Openness → Altruism	.004	.010	.010	.712
Indirect	Extraversion → Altruism	.012	.011	.037	.243
Indirect	Neuroticism → Altruism	−.032	.011	−.103	.001
Total	Conscientiousness → Altruism	.105	.040	.261	.011
Total	Agreeableness → Altruism	.133	.033	.436	.001
Total	Openness → Altruism	.012	.033	.029	.720
Total	Extraversion → Altruism	.001	.030	.004	.972
Total	Neuroticism → Altruism	−.093	.029	−.302	.001

Table 4 shows that the total path coefficient between neuroticism and altruistic behaviors was negative and statistically significant (β = −.302, p = .001), whereas the total path coefficients of conscientiousness (β = .261, p = .011) and agreeableness (β = .436, p = .001) with altruistic behaviors were positive and statistically significant. Table 4 further shows that the path coefficient between self-compassion and altruistic behaviors was positive and statistically significant (β = .443, p = .001). In addition, the indirect path coefficient between neuroticism and altruistic behaviors was negative and statistically significant (β = −.103, p = .001), whereas the indirect path coefficients of agreeableness (β = .090, p = .001) and conscientiousness (β = .076, p = .026) with altruistic behaviors were positive and statistically significant. Accordingly, it was concluded that self-compassion significantly mediated the relationship between neuroticism and altruistic behaviors in a negative direction and significantly mediated the relationships of agreeableness and conscientiousness with altruistic behaviors in a positive direction among nurses.

Figure 1 presents the structural model of the study based on standardized estimates.

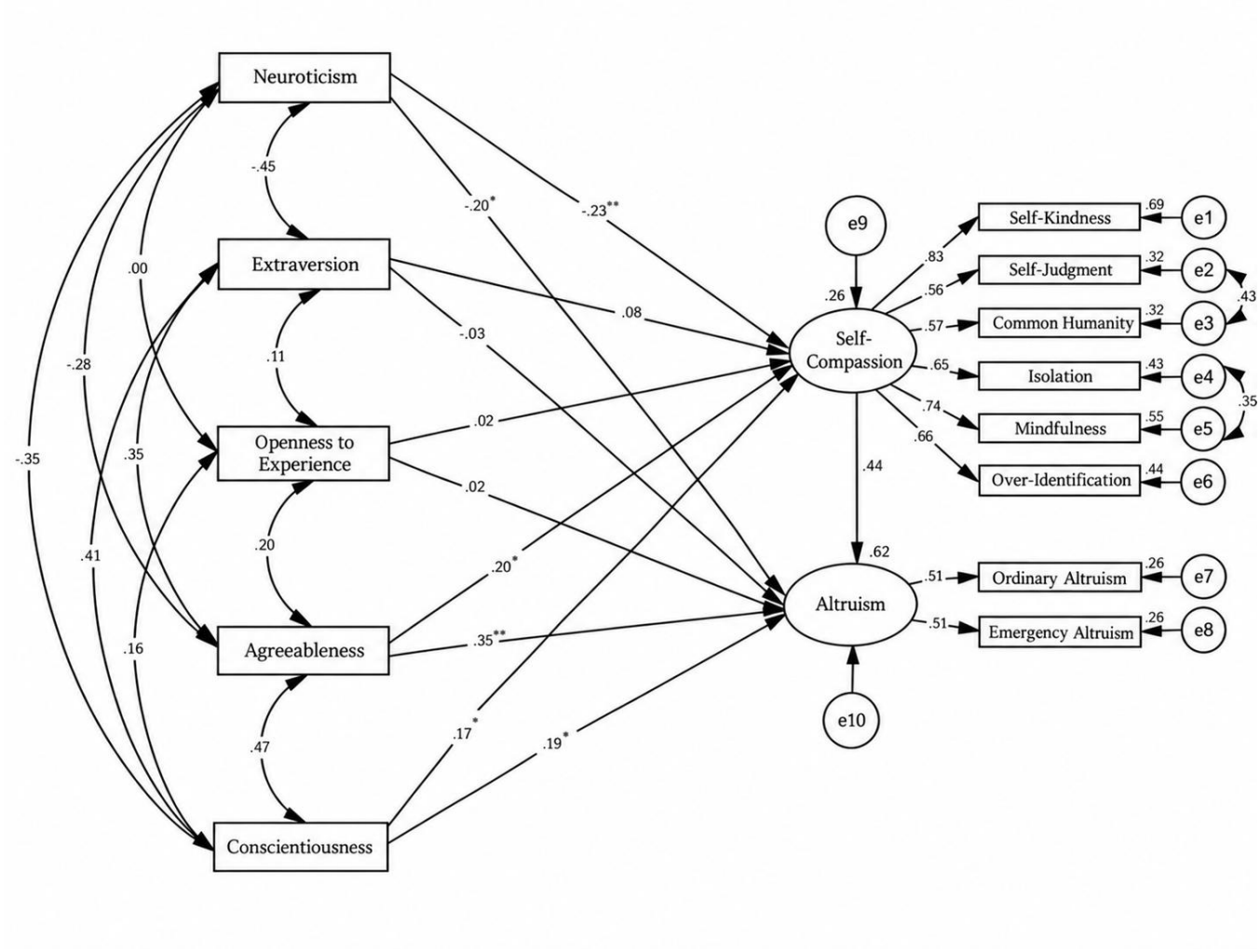

Figure 1. Standardized Parameters of the Structural Model

The figure indicates that the squared multiple correlation coefficient (R^2) for altruistic behaviors was .62. This finding indicates that personality traits and self-compassion jointly explained 62% of the variance in altruistic behaviors among nurses.

Discussion and Conclusion

The present study investigated the mediating role of self-compassion in the relationship between personality traits and altruistic behaviors among nurses. The structural equation modeling results showed that the proposed model had an acceptable fit to the data, and personality traits together with self-compassion explained 62% of the variance in altruistic behaviors. More specifically, neuroticism had a significant negative total effect on altruistic behavior ($\beta = -.302$, $p = .001$), whereas conscientiousness ($\beta = .261$, $p = .011$) and agreeableness ($\beta = .436$, $p = .001$) had significant positive total effects. Openness to experience and extraversion did not have significant total effects on altruistic behavior. Self-compassion also had a significant positive direct effect on altruistic behavior ($\beta = .443$, $p = .001$). In addition, self-compassion significantly mediated the relationships of neuroticism, conscientiousness, and agreeableness with altruistic behavior. The indirect effect of neuroticism on altruism through self-compassion was negative and significant ($\beta = -.103$, $p = .001$), whereas the indirect effects of conscientiousness ($\beta = .076$, $p = .026$) and

agreeableness (β = .090, p = .001) were positive and significant. These findings indicate that both stable personality dispositions and the way nurses relate to themselves during difficult emotional experiences are important in explaining altruistic behavior in clinical settings.

The significant negative association between neuroticism and altruistic behavior is theoretically meaningful. Neuroticism is characterized by heightened emotional reactivity, vulnerability to stress, anxiety, negative affect, and difficulty regulating unpleasant internal states. Nurses with higher neuroticism may therefore be more likely to experience clinical demands as threatening or emotionally overwhelming, which can redirect attentional and emotional resources toward their own distress and reduce the psychological capacity available for helping others. This interpretation is consistent with evidence showing that personality traits are related to burnout among nurses, with emotionally vulnerable dispositional patterns being particularly relevant to occupational strain (15). Neuroticism has also been associated with affective processing systems involved in heightened sensitivity to emotionally salient information, suggesting that this personality dimension may intensify responses to stressful interpersonal situations (14). In caregiving contexts, such heightened reactivity may make it more difficult for individuals to maintain calm, empathic, and other-oriented responses when confronted with suffering, interpersonal conflict, or urgent demands.

The negative effect of neuroticism is also consistent with evidence linking this trait to lower compassion-related functioning. Research has shown that neuroticism overlaps substantially with self-compassion, particularly in relation to self-criticism, emotional instability, and negative self-evaluation (25). Likewise, higher neuroticism has been associated with greater vulnerability to stress-related and depressive processes, whereas compassion appears to function as a protective factor against such maladaptive emotional patterns (26). In the present study, neuroticism had a significant negative direct effect on self-compassion (β = −.233, p = .001), suggesting that emotionally unstable nurses may have greater difficulty responding to their own suffering with kindness, perspective, and balanced awareness. Because lower self-compassion may increase self-criticism, rumination, and emotional over-identification, it may indirectly interfere with the capacity to respond constructively to patients and colleagues. This interpretation is supported by findings that low self-compassion is associated with depressive symptoms, rumination, and avoidance (22), as well as evidence that self-compassion is associated with healthier coping with stress and adversity (21).

The significant positive total effect of agreeableness on altruistic behavior was the strongest among the personality traits examined in this study. This finding is compatible with the conceptual nature of agreeableness, which includes cooperativeness, empathy, trust, interpersonal warmth, consideration, and concern for the welfare of others. Individuals high in agreeableness are generally more motivated to preserve harmonious social relationships and respond sensitively to others' needs. Therefore, in nursing environments, agreeableness may facilitate behaviors such as assisting distressed patients, supporting colleagues, sharing responsibilities, and engaging in emotionally supportive interactions. The finding is consistent with broader social psychological models of prosocial behavior, which emphasize dispositional concern for others as an important antecedent of helping (1). It is also compatible with evidence showing that personality traits are important determinants of prosocial behavior (9) and that specific Big Five dimensions are related to helping behaviors among adolescents and other populations (8).

The finding concerning agreeableness is especially relevant to nursing because altruistic behavior is closely connected to empathy and sensitivity to others' needs. Previous research has shown that personality

characteristics are associated with cognitive empathy in health-related educational settings (17). Moreover, moral sensitivity and empathy have been linked with prosocial behavior in nurses, indicating that interpersonal sensitivity can translate into more humane and helping-oriented clinical behavior (5). An agreeable nurse may be more willing to listen to patients, accommodate colleagues, reduce interpersonal conflict, and engage in behaviors that prioritize collective rather than purely individual interests. In this sense, agreeableness may support both ordinary altruism in routine interactions and emergency altruism when immediate assistance is required. This is also consistent with evidence that prosocial behavior contributes to positive nursing work environments, organizational functioning, and quality of care (2).

Conscientiousness also had a significant positive total effect on altruistic behavior. Conscientious individuals are generally characterized by responsibility, dependability, self-discipline, organization, and adherence to standards and duties. In nursing, these qualities may promote altruism through a strong sense of professional obligation and accountability. A conscientious nurse may be more likely to respond consistently to patients' needs, assist colleagues when workloads increase, and perceive helping as part of responsible professional conduct. This finding is aligned with evidence that conscientiousness is associated with altruism, civic virtue, and motivation among health workers (12). It also accords with research demonstrating that conscientiousness can influence prosocial behavior by moderating responses to situational cues that elicit helping (10). Furthermore, conscientiousness has been linked to moral functioning and responsible conduct, supporting the possibility that this trait increases the likelihood that ethical obligations are translated into observable prosocial action (13).

The significant positive relationship between self-compassion and altruistic behavior represents one of the central findings of the present study. Self-compassion reflects the ability to respond to one's own suffering with self-kindness, awareness of common humanity, and mindful emotional balance rather than with harsh self-judgment, isolation, or over-identification. Although self-compassion is directed toward the self, the present findings suggest that it is not a self-centered orientation. Instead, nurses with higher self-compassion may possess greater emotional resources for responding to others' needs. This interpretation is consistent with longitudinal evidence showing that self-compassion can promote gratitude and prosocial behavior over time (30). It is also supported by research indicating that the development of self-compassion is positively associated with empathy and prosocial behavior rather than selfishness (29). Most importantly, a recent multilevel meta-analysis demonstrated a positive association between self-compassion and prosocial behavior across studies, providing broad support for the idea that compassion toward oneself can extend to compassionate behavior toward others (31).

One explanation for this relationship is that self-compassion may reduce the amount of psychological energy consumed by self-criticism, shame, defensive responding, and rumination. When nurses encounter stressful events, mistakes, conflict, or exposure to suffering, those with greater self-compassion may be better able to regulate their emotional reactions without becoming overwhelmed. This may preserve attention and emotional availability for patients and colleagues. The positive relationship between self-compassion and well-being demonstrated in meta-analytic research supports this interpretation (20). Likewise, self-compassion has been associated with adaptive coping under chronic stress (21). In health-care professionals, mindfulness and self-compassion have also been associated with empathy, suggesting that self-directed emotional regulation may facilitate rather than inhibit interpersonal responsiveness (24). From

this perspective, self-compassion may serve as a psychological resource that allows nurses to remain emotionally engaged in caregiving without becoming excessively depleted by difficult clinical experiences.

The mediating role of self-compassion between neuroticism and altruistic behavior further clarifies how personality may be translated into social behavior. Neuroticism was associated with lower self-compassion, and lower self-compassion, in turn, was associated with lower altruism. Thus, part of the negative influence of neuroticism on helping behavior appears to operate through maladaptive self-relating. Nurses high in neuroticism may be more prone to emotional over-identification, self-judgment, and perceived isolation when experiencing stress, all of which are incompatible with the balanced emotional stance reflected in self-compassion. This pattern is consistent with the theoretical distinction between neurotic vulnerability and compassion-based regulation (25). It also corresponds with compassion-focused models in which the activation of soothing and affiliative systems counteracts threat-based emotional processes (19). Therefore, although neuroticism is relatively stable, strengthening self-compassion may partially reduce the extent to which emotional vulnerability translates into lower altruistic functioning.

Self-compassion also significantly mediated the positive relationships of agreeableness and conscientiousness with altruistic behavior. These findings suggest that agreeable and conscientious individuals may be more altruistic not only because of their interpersonal and self-regulatory dispositions, but also because these personality patterns are associated with a more adaptive way of responding to personal difficulties. Agreeable individuals may generalize warmth and nonjudgmental acceptance from interpersonal relationships to the self, whereas conscientious individuals may approach failure and difficulty with greater emotional regulation and constructive coping. In both cases, self-compassion may strengthen the pathway from personality to prosocial behavior by reducing emotional defensiveness and promoting more stable engagement with others. This interpretation is consistent with research showing that self-compassion can mediate the effect of personality traits on positive psychological functioning (27). It is also congruent with evidence that self-compassion and social responsibility together contribute to prosocial behavior (32).

The nonsignificant effects of extraversion and openness on altruistic behavior are also noteworthy. Although both traits may be associated with social engagement or cognitive flexibility, neither necessarily entails a stable motivation to prioritize others' welfare. Extraversion primarily reflects sociability, assertiveness, and positive affect, but highly extraverted individuals are not inevitably more altruistic unless other interpersonal or moral characteristics are present. Similarly, openness to experience is characterized by curiosity, imagination, and receptivity to novelty, which may not directly translate into helping behavior. Previous research has shown that different Big Five traits vary considerably in their association with prosocial behavior (8, 9). The present findings therefore reinforce the view that agreeableness and conscientiousness may be more directly relevant to altruism than openness or extraversion, particularly in professional caregiving settings where responsibility and interpersonal concern are central.

The present findings also have implications for understanding altruistic behavior within the nursing profession more broadly. Altruism in nursing has been conceptualized as an important component of caring, professional identity, and service motivation (4). Prosocial behaviors among nurses can improve communication, teamwork, and service delivery, with consequences for both organizational effectiveness and patient care (2, 6). Similarly, prosocial behavior has been associated with greater subjective well-being

among nursing students through resilience and coping mechanisms (7). Among care professionals more generally, resilience has also been linked to prosocial functioning (33). These findings suggest that altruism should not be regarded solely as a moral characteristic of the individual nurse; rather, it is embedded within a broader network of personality, emotional regulation, resilience, interpersonal functioning, and organizational processes.

The explanatory power of the final model is particularly notable because personality traits and self-compassion jointly accounted for 62% of the variance in altruistic behavior. This suggests that the combination of relatively stable dispositional factors and a potentially modifiable psychological resource provides a meaningful framework for understanding why nurses differ in altruistic responding. Recent research has similarly emphasized that prosocial behavior at work is determined by multiple individual and contextual antecedents and has meaningful consequences for employees and organizations (3). Findings among nursing undergraduates also indicate that the influence of personality on prosocial behavior may operate through intermediate psychological mechanisms, such as a sense of responsibility (11). The present study extends this line of reasoning by identifying self-compassion as another plausible mediating process. Given that self-compassion can be enhanced through structured interventions (23) and is supported as a theoretically coherent construct (18), its mediating role may have both theoretical and applied importance.

The findings should be interpreted in light of several limitations. First, the descriptive-correlational and cross-sectional design does not permit definitive causal conclusions regarding the direction of the relationships among personality traits, self-compassion, and altruistic behaviors. Second, all variables were assessed using self-report questionnaires, which may be influenced by social desirability, recall bias, response tendencies, and common-method variance, particularly because altruism is a socially valued behavior among nurses. Third, the participants were selected through voluntary nonprobability sampling from hospitals in Tehran, which limits the generalizability of the findings to nurses working in other regions, health-care systems, cultural contexts, or occupational settings. Fourth, there was some inconsistency between the predefined age eligibility criterion and the demographic distribution reported in the sample, which should be considered when interpreting the representativeness of the participants. Finally, the model focused primarily on individual psychological factors and did not incorporate potentially important organizational variables such as workload, staffing adequacy, leadership style, organizational support, burnout, job satisfaction, ward type, or exposure to critical incidents.

Future studies should employ longitudinal and prospective designs to clarify the temporal sequence among personality traits, self-compassion, and altruistic behavior and to test whether changes in self-compassion predict subsequent changes in prosocial conduct. Experimental and intervention studies could examine whether structured self-compassion training enhances altruistic behavior, particularly among nurses with higher neuroticism or lower baseline agreeableness and conscientiousness. Future research should also use multi-method assessment by combining self-report data with peer ratings, supervisor evaluations, behavioral observations, or objective indicators of helping behavior to reduce common-method bias. Replication across different cities, countries, hospital types, nursing specialties, and career stages would improve the external validity of the findings. Researchers may also extend the present model by examining additional mediators and moderators, including empathy, moral sensitivity, resilience,

compassion fatigue, burnout, emotional regulation, psychological safety, work engagement, job satisfaction, and perceived organizational support.

In practice, the findings suggest that nursing administrators, hospital psychologists, and professional development units may benefit from incorporating self-compassion training into psychological empowerment and continuing education programs for nurses. Such programs can include exercises in self-kindness, mindful awareness, balanced responses to mistakes, recognition of common humanity, and reduction of harsh self-judgment. Screening and developmental assessment of personality-related strengths may also help organizations tailor supportive interventions to the needs of different nurses without using personality characteristics in a stigmatizing or exclusionary manner. Nurses with greater emotional vulnerability may particularly benefit from structured programs that strengthen adaptive self-regulation, whereas programs for all staff can emphasize cooperation, responsibility, empathy, and prosocial teamwork. At the organizational level, creating supportive work environments that reduce unnecessary stress and recognize helping behavior may further strengthen the translation of individual psychological resources into altruistic clinical practice.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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